

WHAT IS CLAIMED IS:

1. A method for diagnosing a noisy failure of a fuel level sensor in a vehicle, comprising:

determining if a predetermined diagnosis beginning condition is satisfied;

5 comparing, when the diagnosis beginning condition is satisfied, a conversion voltage with a predetermined voltage, the conversion voltage being converted from a signal from the fuel level sensor;

counting a number of detections of a fluctuation in accordance with the comparison of the conversion voltage with the predetermined voltage;

10 comparing a fluctuation detection duration with a predetermined period;

comparing, when the fluctuation detection duration exceeds the predetermined period, a fluctuation detection counter value with a first predetermined number;

counting a noisy failure when the fluctuation detection counter exceeds the first predetermined number;

15 comparing a noisy failure counter value with a second predetermined number;

and

warning of a noisy failure when the noisy failure counter value exceeds the second predetermined number.

20 2. The method of claim 1, further comprising:

resetting the noisy failure counter before determining if the predetermined diagnosis beginning condition is satisfied; and

resetting the fluctuation detection counter before determining if the predetermined diagnosis beginning condition is satisfied.

25 3. The method of claim 1, wherein the diagnosis beginning condition comprises an engine running state condition, a vehicle running state condition, an idle switch condition, and an engine speed condition, wherein:

30 the engine running state condition is set as whether the engine is not stalled or in a starting state;

the vehicle running state condition is set as whether the vehicle is stationary;

the idle switch condition is set as whether an idle switch is turned on; and

the engine speed condition is set as whether the engine speed is less than a predetermined speed.

4. The method of claim 3, wherein the diagnosis beginning condition further comprises a fuel stabilization condition that is set as whether a predetermined elapsing period has been elapsed after the engine running state condition, the vehicle running state condition, the idle switch condition, and the engine speed condition are all satisfied.

5. The method of claim 1, wherein the conversion voltage is calculated as an absolute value of a difference between a raw detected value and a filtered value of the fuel level sensor.

6. The method of claim 1, wherein counting a detection of a fluctuation increases the fluctuation detection counter value by one (1).

7. The method of claim 2, wherein the resetting the fluctuation detection counter is executed when the diagnosis beginning condition is not satisfied in determining if the predetermined diagnosis beginning condition is satisfied.